King County
Department of Development and Environmental Services
Land Use Services Division
900 Oakesdale Avenue Southwest
Renton, Washington 98055-1219
206-296-6600 TTY 206-296-7217

Engineering Review Checklist

Alternative formats available upon request

PROJECT INFORMATION 1998 SWDM

* Project Name: _____
* Development Number: _____ * Activity Number: _____
* Project Number: _____
* Parcel Number: _____
* Project Location (approximate cross street): _____
* Owner (or rep.): _____ * Telephone: _____
* Design Engineer: _____ * Telephone: _____
* Peer: _____ * Telephone: _____
* DDES Preliminary Engr: _____ * Telephone: _____
* DDES Planner: _____ * Telephone: _____
* DDES Review Engr.: _____ * Telephone: _____
* DDES Engr. Tech: _____ * Telephone: _____

NA	DO	OK	
[ ]	[ ]	[ ]	* Blue Engineer File Created with Key Documents
[ ]	[ ]	[ ]	* Plat Ordinance Number:_____…….date: _____
[ ]	[ ]	[ ]	* Hearing Examiner's Report ……date: _____
[ ]	[ ]	[ ]	* DDES Staff Report……date: _____
[ ]	[ ]	[ ]	* Preliminary Plat Map ……date: _____
[ ]	[ ]	[ ]	* Revised Preliminary Plat Map ……..date: _____
[ ]	[ ]	[ ]	* 5-year Expiration……date: _____
[ ]	[ ]	[ ]	* Project information on Permits Plus

ROUTING TO OTHER KING COUNTY SECTIONS

NA	DO	OK		
[ ]	[ ]	[ ]	* Wetland Report/Plans: Route Date: _____	Response Date: _____
[ ]	[ ]	[ ]	* Geotechnical Report/Plans: Route Date: _____	Response Date: _____
[ ]	[ ]	[ ]	* Grading Report/Plans: Route Date: _____	Response Date: _____
[ ]	[ ]	[ ]	* Structural Report/Plan: Route Date: _____	Response Date: _____
[ ]	[ ]	[ ]	* Landscape/Park Report/Plan: Route Date: _____	Response Date: _____
[ ]	[ ]	[ ]	* Traffic Report/Plan: Route Date: _____	Response Date: _____
[ ]	[ ]	[ ]	* Other Report/Plan: Route Date: _____	Response Date: _____

GENERAL SUDIVISION REQUIREMENTS

NA	DO	OK	
[ ]	[ ]	[ ]	Site plans match preliminary approval application map
[ ]	[ ]	[ ]	Compliance with conditions of preliminary approval letter
[ ]	[ ]	[ ]	Compliance with Mitigated Determination of Non-Significance

Check out the DDES Web site at www.metrokc.gov/ddes

Activity Number: _____

GENERAL REQUIREMENTS – SURFACE WATER DESIGN MANUAL

NA	DO	OK	
			2.3.1.2 General: Plan Formatting
[ ]	[ ]	[ ]	(1) * Sheet size 24" X 36"; quality reproducibles
[ ]	[ ]	[ ]	(2) * King Co. Standard Map Symbols; existing/proposed (Reference 7A)
[ ]	[ ]	[ ]	(3) * Project Information/Cover Sheet
[ ]	[ ]	[ ]	a. * Title: Project name and DDES file number
[ ]	[ ]	[ ]	b. * Table of Contents if more than 3 plan sheets
[ ]	[ ]	[ ]	c. * Vicinity Map
[ ]	[ ]	[ ]	d. * Name & Phone of Utility field contacts and One Call Number: 1-800-424-5555 (water, sewer, gas, power)
[ ]	[ ]	[ ]	e. * Pre-construction/Inspection notification requirements
[ ]	[ ]	[ ]	f. * Name and Phone of erosion control supervisor
[ ]	[ ]	[ ]	g. * Name & Phone of Surveyor
[ ]	[ ]	[ ]	h. * Name & Phone of Owner/Agent
[ ]	[ ]	[ ]	i. * Name & Phone of Applicant
[ ]	[ ]	[ ]	j. * Legal description
[ ]	[ ]	[ ]	k. * Plan approval block for DDES
[ ]	[ ]	[ ]	l. * Name & Phone of engineering firm preparing plans
[ ]	[ ]	[ ]	m. * Fire Marshal's approval stamp (if required)
[ ]	[ ]	[ ]	n. * Mailbox location approval by U.S. Postal Service
[ ]	[ ]	[ ]	o. * List of conditions of preliminary approval on all site improvements
[ ]	[ ]	[ ]	(4) * An overall site plan if more than three plan sheets are used
[ ]	[ ]	[ ]	a. * The complete property area development
[ ]	[ ]	[ ]	b. * Right-of-way information
[ ]	[ ]	[ ]	c. * Street names and road classification
[ ]	[ ]	[ ]	d. * All project phasing and proposed division boundaries
[ ]	[ ]	[ ]	e. * All natural and proposed drainage collection and conveyance systems with catch basin numbers shown
[ ]	[ ]	[ ]	(5) * Each sheet and TIR is stamped, signed, and dated by a Professional Engineer licensed in Washington State
[ ]	[ ]	[ ]	(7) * Title block on each sheet
[ ]	[ ]	[ ]	a. * Development title
[ ]	[ ]	[ ]	b. * Name, address and phone number of engineering firm
[ ]	[ ]	[ ]	c. * Revision block
[ ]	[ ]	[ ]	e. * page numbering
[ ]	[ ]	[ ]	f. * Sheet title (e.g., road and drainage, grading, etc.
[ ]	[ ]	[ ]	(8) * A blank approval block (4" high x 6" wide) on each plan sheet
[ ]	[ ]	[ ]	(9) * The location and label for each section or other detail shall be provided
[ ]	[ ]	[ ]	(10) * Sensitive Area Setbacks designated as required by the SAO (K.K.C. 21A.24)
[ ]	[ ]	[ ]	(11) * All match lines correspond to the sheet referenced
[ ]	[ ]	[ ]	(12) * Division phase lines with limits of construction
[ ]	[ ]	[ ]	(13) * Wetlands are numbered or marked "uninventoried"
[ ]	[ ]	[ ]	(13) * General, Drainage, * Structural notes (Reference 7B)
			2.3.1.2 Plan View
[ ]	[ ]	[ ]	(1) * Property lines, R/W lines, roadway widths shown
[ ]	[ ]	[ ]	(2) * Existing/Proposed road features; CL, edge pavement, edge shoulder, ditches, curb, sidewalk, & access pts
[ ]	[ ]	[ ]	(3) * Topographic Contours @ 2', 5' > 15% slope, 10' > 40% slope
[ ]	[ ]	[ ]	(4) * All affected utilities are shown; utility poles marked
[ ]	[ ]	[ ]	(5) * All roads and adjoining subdivisions identified
[ ]	[ ]	[ ]	(6) * Existing/Proposed R/W dimensioned and shown
[ ]	[ ]	[ ]	(7) * Existing/Proposed surfacing shown
[ ]	[ ]	[ ]	(8) * Scale 1" = 50' Horizontal (1" = 100' for lots > 1 Acre)

* Denotes completion by engineering technician

Activity Number: _____

ROADWAY DESIGN – KING COUNTY ROAD STANDARDS (K.C.R.S.) 1993

K.C.R.S Variance Number: _____ **Approval Date:** _____

ROAD CLASSIFICATION TABLE	
Name of Roadway	**K.C.R.S. Classification**

NA	DO	OK			
[ ]	[ ]	[ ]	[ ]	2.03C	Maximum Superelevation (2.05)
[ ]	[ ]	[ ]	[ ]	2.03E	Maximum grade (2.11)
[ ]	[ ]	[ ]	[ ]	2.03E	Maximum grade (2.11)
[ ]	[ ]	[ ]	[ ]	2.03F	Stopping Sight Distance (2.05, 2.12)
[ ]	[ ]	[ ]	[ ]	2.03F	Stopping Sight Distance (2.05, 2.12)
[ ]	[ ]	[ ]	[ ]	2.03G	Entering Sight Distance (2.05, 2.13)
[ ]	[ ]	[ ]	[ ]	2.03G	Entering Sight Distance (2.05, 2.13)
[ ]	[ ]	[ ]	[ ]	2.03H	Minimum pavement width
[ ]	[ ]	[ ]	[ ]	2.03H	Minimum pavement width
[ ]	[ ]	[ ]	[ ]	2.03I	Minimum roadway width
[ ]	[ ]	[ ]	[ ]	2.03I	Minimum roadway width
[ ]	[ ]	[ ]	[ ]	2.03J	Minimum R/W width
[ ]	[ ]	[ ]	[ ]	2.03J	Minimum R/W width
[ ]	[ ]	[ ]	[ ]	2.03J	Min. R/W width (incl. 1 ft behind walk/curb)
[ ]	[ ]	[ ]		2.03L	Minimum Half-Street width (2.07)
[ ]	[ ]	[ ]	[ ]	2.05	Horizontal curves
[ ]	[ ]	[ ]	[ ]	2.05	Horizontal curves
[ ]	[ ]	[ ]	[ ]	2.10A	Intersection minimum curb radius
[ ]	[ ]	[ ]	[ ]	2.10A	Intersection minimum curb radius
[ ]	[ ]	[ ]	[ ]	2.10A	Intersection minimum R/W corner radius
[ ]	[ ]	[ ]	[ ]	2.10A	Intersection minimum R/W corner radius
[ ]	[ ]	[ ]	[ ]	2.10C	Intersection landing
[ ]	[ ]	[ ]	[ ]	2.10C	Intersection landing
[ ]	[ ]	[ ]	[ ]	4.01	Proper road sections and surfacing (Dwg. Nos. 1-001 – 1-006)
[ ]	[ ]	[ ]	[ ]	4.01	Proper road sections and surfacing (Dwg. Nos. 1-001 – 1-006)
[ ]	[ ]	[ ]	[ ]	4.01	Proper road sections and surfacing (Dwg. Nos. 1-001 – 1-006)

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ROADWAY DESIGN – KING COUNTY ROAD STANDARDS (K.C.R.S.) 1993
Continued

NA	DO	OK		
[ ]	[ ]	[ ]	2.08A	Minimum Cul-De-Sac diameters
[ ]	[ ]	[ ]	2.08B	Maximum Cul-De-Sac length
[ ]	[ ]	[ ]	2.10A	Angle of intersection between 85 and 95 degrees, minimum centerline radius
[ ]	[ ]	[ ]	2.10B	Intersection minimum spacing
[ ]	[ ]	[ ]	3.01	Driveways
[ ]	[ ]	[ ]	2.13	Driveways; ESD
[ ]	[ ]	[ ]	3.02A&B	Sidewalks and widths
[ ]	[ ]	[ ]	3.05	Handicapped access ramp (WSDOT F-3)
[ ]	[ ]	[ ]	4.01F	Pavement overlay for widening and channelization
[ ]	[ ]	[ ]	4.02	Residential street design
[ ]	[ ]	[ ]	4.02	Poor subgrade evaluation
[ ]	[ ]	[ ]	4.03	Arterial pavement design
[ ]	[ ]	[ ]	4.05	Pavement markings, channelization, and tapers
[ ]	[ ]	[ ]	5.01	Rock facings (Dwg. Nos. 5-004 – 5-007)
[ ]	[ ]	[ ]	5.02	Side, slopes, generally 2H:1V
[ ]	[ ]	[ ]	5.03	Street trees and landscaping
[ ]	[ ]	[ ]	5.04	Mail boxes (Dwg. Nos. 5-010 – 5-012)
[ ]	[ ]	[ ]	5.05	Illumination plan or notes
[ ]	[ ]	[ ]	5.06A	Survey monuments to be disturbed are shown
[ ]	[ ]	[ ]	5.08	Bollards for walkways or maintenance roads
[ ]	[ ]	[ ]	5.11	Roadside obstacles
[ ]	[ ]	[ ]	7.02A,B,C,D	Grass-lined, pipe or rock lined, special designed ditch
[ ]	[ ]	[ ]	7.01A	Minimum self-cleaning pipe flow velocities (KCSWDM Section 4.3.4)
[ ]	[ ]	[ ]	7.04A	Maximum spacing between catch basins
[ ]	[ ]	[ ]	7.04E	CBs taller than 5' (grate to invert) are Type II
[ ]	[ ]	[ ]	7.05A,E	Vaned grates, locking covers and grates for all CBs (except rolled grates)
[ ]	[ ]	[ ]	8.03B	Open cutting of existing roadways, patch requirements

NOTES:

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Activity Number: _____

DRAINAGE DESIGN – SURFACE WATER DESIGN MANUAL (1998)

SWDM Variance Number: _____ **Approval Date:** _____

NA	DO	OK	2.3.1.1. Technical Information Report
[ ]	[ ]	[ ]	Project Overview (Section 1)
[ ]	[ ]	[ ]	Figure 1: TIR Worksheet
[ ]	[ ]	[ ]	Figure 2: Site Location
[ ]	[ ]	[ ]	Figure 3: Drainage Basins
[ ]	[ ]	[ ]	a. Acreage of subbasins
[ ]	[ ]	[ ]	b. Identify all site characteristics
[ ]	[ ]	[ ]	c. Show existing discharge points to and from the site
[ ]	[ ]	[ ]	d. Show routes of existing, construction, and future flows at all discharge points and downstream hydraulic structures
[ ]	[ ]	[ ]	e. Use a minimum USGS 1:2400 topographic map as a base
[ ]	[ ]	[ ]	f. Show and cite the length of travel from the farthest upstream end of a proposed storm system in the development to any proposed flow control facility
[ ]	[ ]	[ ]	Figure 4: Soils
[ ]	[ ]	[ ]	a. Show the project site
[ ]	[ ]	[ ]	b. the area draining to the site
[ ]	[ ]	[ ]	c. the drainage system downstream for the distance of the downstream analysis
[ ]	[ ]	[ ]	Preliminary Conditions Summary with responses (Section 2)
[ ]	[ ]	[ ]	Off-Site Analysis (Section 3)
[ ]	[ ]	[ ]	Flow Control and Water Quality Facility Analysis and Design (Section 4)
[ ]	[ ]	[ ]	Existing Site Hydrology (Part A)
[ ]	[ ]	[ ]	Developed Site Hydrology (Part B)
[ ]	[ ]	[ ]	Performance Standards (Part C)
[ ]	[ ]	[ ]	Flow Control System (Part D)
[ ]	[ ]	[ ]	Water Quality System (Part E)
[ ]	[ ]	[ ]	Conveyance System Analysis and Design (Section 5)
[ ]	[ ]	[ ]	Special Reports and Studies (Section 6)
[ ]	[ ]	[ ]	Other Permits (Section 7)
[ ]	[ ]	[ ]	Erosion/Sedimentation Control Design (Section 8)
[ ]	[ ]	[ ]	Bond Quantities Worksheet and R/D Facility Summary (Section 9)
[ ]	[ ]	[ ]	Maintenance and Operations Manual (Section 10 for privately maintained or special non-standard features)

NA	DO	OK	4.1 Conveyance System Design and Analysis
[ ]	[ ]	[ ]	4.1 Conveyance systems are in easements with BSBLs
[ ]	[ ]	[ ]	Pipes are parallel to and alongside property lines
[ ]	[ ]	[ ]	Easements for pipes outside of right-of-way
[ ]	[ ]	[ ]	Catch basin lids are flush with ground line
[ ]	[ ]	[ ]	Plan & Profile (pipe type, length, elevs., dia., & slope)
[ ]	[ ]	[ ]	Minimum cover for pipes (4.3.4D-U)
[ ]	[ ]	[ ]	Stations and Offsets provided for each CB in roadway
[ ]	[ ]	[ ]	Roof drain stubouts are shown, type of pipe described
[ ]	[ ]	[ ]	Arrows show direction of all surface and system flows

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Activity Number: _____

DRAINAGE DESIGN – SURFACE WATER DESIGN MANUAL (1998)
Continued

NA	DO	OK	5.3 Retention/Detention Facility Design
[ ]	[ ]	[ ]	R/D Facilities are in tracts or dedicated R/W with setbacks
[ ]			5.3.1 Detention Ponds
	[ ]	[ ]	Dam Safety Compliance
	[ ]	[ ]	Two cross-sections through pond (one x-section to include control structure)
	[ ]	[ ]	Designed as flow-through system
	[ ]	[ ]	Side slopes interior 3H:1V or fenced
	[ ]	[ ]	Vertical interior retaining walls stamped by licensed structural civil engineer. Min. 25% of perimeter vegetated and no steeper than 3:1
	[ ]	[ ]	Primary overflow
	[ ]	[ ]	Secondary inlet
	[ ]	[ ]	Emergency Overflow Spillway
	[ ]	[ ]	Soil and compaction requirements described (95% modified proctor)
	[ ]	[ ]	Access road min. turning radius, maximum grade, min. width, fences or gates
	[ ]	[ ]	Minimum berm width of 6 feet
	[ ]	[ ]	Pond sign
	[ ]	[ ]	Fencing and planting requirements
[ ]			5.3.2. Detention Tanks
	[ ]	[ ]	6" of dead storage in tank bottom
	[ ]	[ ]	Minimum pipe diameter of 36"
	[ ]	[ ]	Materials and structural stability
	[ ]	[ ]	Access risers and CBs are spaced properly with max. depth from finished grade to tank invert shall be 20 feet and accessible by maintenance vehicles
[ ]			5.3.3 Detention Vaults
	[ ]	[ ]	Structural package submitted for approval
	[ ]	[ ]	Grate over sump with 2' x 2' hinged access door
	[ ]	[ ]	Access to tank positioned a max. of 50 feet from any location. (if over 3 foot cover use cone riser).
	[ ]	[ ]	Removable 5 x 10 panel if vault greater than 1,250 sq. ft. floor area
	[ ]	[ ]	Maximum depth from finished grade to vault invert to be 20 feet
	[ ]	[ ]	Minimum internal height shall be 7 feet, min. width shall be 4 feet min.
	[ ]	[ ]	Ventilation pipes provided in all four corners
[ ]			5.3.4 Control Structures
	[ ]	[ ]	Section and plan view shown top scale
	[ ]	[ ]	Orifice size and elevation on plans match calculations
[ ]			5.4 Infiltration Facilities
	[ ]	[ ]	Appropriate soils logs and testing procedures in TIR
	[ ]	[ ]	100-yr overflow conveyance
	[ ]	[ ]	Spill Control device
	[ ]	[ ]	Pre-settling
	[ ]	[ ]	Design water surface set back of 20 feet from external tract, easement or property lines

NOTES:

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Activity Number _____

DRAINAGE DESIGN – SURFACE WATER DESIGN MANUAL (1998)
Continued

NA	DO	OK	6.1. Water Quality Facility Design
[ ]			6.1 Water Quality
[ ]	[ ]	[ ]	6.2.2A Water Quality sequencing
[ ]	[ ]	[ ]	6.2.3 Setbacks, slopes and embankments
[ ]	[ ]	[ ]	6.2.4 Liners
[ ]			6.3.1 Biofiltration swale
[ ]	[ ]	[ ]	6.3.1 geometry, plantings and access
[ ]	[ ]	[ ]	6.3.4 Filter strips geometry
[ ]	[ ]	[ ]	6.4.1.1 Berms, Baffles, Slopes
[ ]	[ ]	[ ]	6.4.1.1 access and plantings
[ ]			6.4.1 & 6.4.2 Wetponds and Wetvaults
[ ]	[ ]	[ ]	6.4.1.1 Sizing basic or large
[ ]	[ ]	[ ]	6.4.1.1 Berms, Baffles, Slopes
[ ]	[ ]	[ ]	6.4.1.1 access and plantings
[ ]			6.4.3 Stormwater Wetlands
[ ]	[ ]	[ ]	6.4.3.2 geometry, liners, access, plantings
[ ]			6.4.4 Combination Detention and Wetpool facilities
[ ]	[ ]	[ ]	6.4.4.2 geometry, berms, baffles, slopes
[ ]	[ ]	[ ]	6.4.4.2 access and plantings
[ ]			6.5 Media Filtration Facility Designs
[ ]	[ ]	[ ]	6.5.1 Pre-settling/pretreatment
[ ]			6.5.2 Sandfilters – Basic and Large
[ ]	[ ]	[ ]	6.5.2.1 Sizing, geometry
[ ]	[ ]	[ ]	6.5.2.1 Overflow/bypass, underdrain, access
[ ]			6.5.3 Sandfilter Vaults
[ ]	[ ]	[ ]	6.5.3.2 Pretreatment, flow-spreading, energy dissipation
[ ]	[ ]	[ ]	6.5.3 Sizing, geometry
[ ]	[ ]	[ ]	6.5.3 overflow/bypass, underdrains and access

NOTES:

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Activity Number: _____

TEMPORARY EROSION/SEDIMENTATION CONTROL
SURFACE WATER DESIGN MANUAL

NA	DO	OK	Appendix D Erosion/Sedimentation Control Plan
[ ]	[ ]	[ ]	NGPE delineation fencing at NGPE boundaries w/detail (D.4.1.1)
			<u>General</u>
[ ]	[ ]	[ ]	(1) Separate plan sheet showing entire site w/features
[ ]	[ ]	[ ]	(2) Limits of clearing to be flagged in the field are shown
[ ]	[ ]	[ ]	(3) Perimeter control of runoff at property boundaries (D.4.3)
[ ]	[ ]	[ ]	(4) Construction entrance with detail (Fig. D.4.G)
[ ]	[ ]	[ ]	(5) Drainage features identified (streams, wetlands, bogs, springs, seeps, swales, ditches, pipes & depressions
[ ]	[ ]	[ ]	(6) Construction sequence (D.10.4)
[ ]	[ ]	[ ]	(7) Utility corridors other than roadways shown
[ ]	[ ]	[ ]	(8) Standard ESC plan notes (D.10.3)
[ ]	[ ]	[ ]	(9) Sufficient conceptual details to convey design intent
[ ]	[ ]	[ ]	(10) Drainage divides and flow directions shown
[ ]	[ ]	[ ]	(11) Specify requirements & best management practices
[ ]	[ ]	[ ]	(12) Show cut and fill slopes with catch lines indicated
			<u>Conveyance</u>
[ ]	[ ]	[ ]	(2) Inverts, min. slopes, & cover for temporary pipes (D.4.6.2)
[ ]	[ ]	[ ]	(3) Grades, dimensions, & direction of open channel flow (D.4.6.3)
[ ]	[ ]	[ ]	(4) Off-site runoff bypasses disturbed areas
			<u>Soils/Ground Cover Protection</u>
[ ]	[ ]	[ ]	(2) Pertinent info. from soils report is added to plans
[ ]	[ ]	[ ]	(3) Areas receiving special treatment are specified (jute netting, rock lining, or sod) (D.4.2)
[ ]	[ ]	[ ]	(4) Soils cover practices and locations of disturbed areas (D.4.2)
			<u>Sedimentation facilities</u>
[ ]	[ ]	[ ]	(1) Sediment pond/trap w/structures shown (D.4.5.1 &2)
[ ]	[ ]	[ ]	(5) Details of sediment pond riser (Fig. D.4.K)
[ ]	[ ]	[ ]	(7) Control/restrictor device location and details
[ ]	[ ]	[ ]	(8) Mulch specifications/berm & slope cover recommendations (D.4.2)
[ ]	[ ]	[ ]	(9) Rock specifications & detail for rock check dams (Fig. D.4.R)
[ ]	[ ]	[ ]	(10) Check dam spacing as required for on-site slopes
[ ]	[ ]	[ ]	(11) Front and side views of rock check dams shown (Fig. D.4.R)
[ ]	[ ]	[ ]	(12) Silt fabric fence locations shown w/detail and specs. (D.4.3.1)

NOTES:

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